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FAST PHYSICS TESTBED FOR THE FASTER PROJECT

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ABSTRACT

This poster describes the Fast Physics Testbed for the new FAst-physics System Testbed and Research (FASTER) project. The overall objective is to provide a convenient and comprehensive platform for fast turn-around model evaluation against ARM observations and to facilitate development of parameterizations for cloud-related fast processes represented in global climate models. The testbed features three major components: a single column model (SCM) testbed, an NWP-Testbed, and high- resolution modeling (HRM). The web-based SCM-Testbed features multiple SCMs from major climate modeling centers and aims to maximize the potential of SCM approach to enhance and accelerate the evaluation and improvement of fast physics parameterizations through continuous evaluation of existing and evolving models against historical as well as new/improved ARM and other complementary measurements. The NWP-Testbed aims to capitalize on the large pool of operational numerical weather prediction products. Continuous evaluations of NWP forecasts against observations at ARM sites are carried out to systematically identify the biases and skills of physical parameterizations under all weather conditions. The high-resolution modeling (HRM) activities aim to simulate the fast processes at high resolution to aid in the understanding of the fast processes and their parameterizations. A four-tier HRM framework is established to augment the SCM- and NWP-Testbeds towards eventual improvement of the parameterizations.

This poster will be displayed at ASR Science Team Meeting.